

oblongis vel oblongo-cuneatis, pedicellis calyce longioribus, interdum geminis, plerumque unifloris, calyce breviter 5-dentato glabro vel puberulo, corolla calyce duplo longiore anguste infundibuliformi, staminibus inclusis.—*L. europæum*, Linn. et auct.; Royle, Ill.; *L. mediterraneum*, Dun. in DC. Prod. xiii. 523 (cum omnibus variet.); *L. Edgeworthii*, Dun. in DC. Prod. xiii. 525; *L. indicum*, Wight, Icones, t. 1403.

Hab. in India prope Delli, Royle; Guzerat, Wight; Sirhind, Edgeworth; Panjab ad Umritsir, T. Anderson.

Folia glabra vel punctulata  $\frac{1}{2}$ –1 unciam longa. Spinæ axillares nudæ vel foliosæ  $\frac{1}{4}$ –1 unciam longæ. Flores gemini vel sæpius solitarii e fasciculis foliorum. Calyx 5-dentatus cyathiformis 1–2 lineas longus, glaber. Corolla calyce longior infundibuliformis 4–6 lineas longa, roseo-alba. Filamenta filiformia inclusa inæqualia, uno cæteris brevior. Antheræ parvæ ovatæ, basi bifidæ. Stylus cylindricus, staminibus longior. Stigma orbiculare, capitatum. Pollen in aqua globosum. Ovarium ovatum. Bacca globosa parva.

In India, special care is required to guard against the undue increase of species, since in this country, besides difficulties arising from want of books of reference, natural causes make the determination of species more difficult than in Europe. One of the most powerful of these is the sudden and complete change of climate in many parts of the Peninsula of India, arising from the periodical recurrence of the rainy season, which often alters the flora from that of an arid plain to one consisting entirely of a large number of tropical annuals. This climatic change also temporarily affects the appearance or "habit" of the perennial plants, causing a wonderful luxuriance of growth and alteration of the foliage. To these changes *Lycium europæum* is fully exposed. It is a native of dry sandy plains, where, before the rains, it is stunted in all its parts; but when the air and soil become charged with moisture, an expansion of all its parts takes place, fully accounting for the multiform characters of its leaves, and the diversity in the length of the spines, &c.

XII.—On the Development of Purpura. By WM. B. CARPENTER, M.D., F.R.S., F.G.S., F.L.S.

To the Editors of the *Annals of Natural History*.

July 20, 1857.

GENTLEMEN,

My friend Dr. Dyster of Tenby (whose competency as an accurate and well-informed microscopist is well known to every naturalist who has visited that place) having applied himself

afresh, at my request, to the question of the development of *Purpura*, has just sent me the following notes, which I will thank you to publish in your next Number:—

“1. The egg-like bodies in the recently-separated egg-capsules are *destitute of any investing membrane*.

“2. In those possessing a ‘directive vesicle,’ an envelope appears very quickly; and in such as are thus distinguished, *the segmentation is regular*, and never in such sort as to give them the lump-of-different-sized-cannon-shot-look (excuse my terminology) which the vitelline spheres assume. The latter segmentate frequently before the true ova,—I mean before those possessing the ‘directive vesicles.’

“3. *I have distinctly seen vitelline spheres from the agglomerated mass pass through the œsophagus, and become united to the mass within the embryo*. I have made several drawings of the œsophagus of embryos at different periods; and I took care not to look at yours first. They are so like as not to be worth sending up, except that the aperture (when seen in front) appears more nearly circular than in your figure. I could see right down to the mass below. On subjecting a full embryo to pressure (under the compressor) applied *a tergo*, the vitelline mass issues through the œsophagus.”

I venture to hope that I am now sufficiently exculpated from the imputation thrown upon me by MM. Koren and Danielssen, of having mistaken for an œsophagus the incipient foot. But if further justification be necessary, I would beg to refer to the memoir of M. Claparède (Müller’s Archiv, April 1857) on the development of *Neritina fluviatilis*, in which all my most important statements are borne out (express reference to them being made) by the analogy of another species, and the co-existence of a mouth and ciliated œsophagus with the rudimentary foot is placed beyond all question\*. It is not a little remarkable that, according to M. Claparède, the observations of M. Lindström, which have been cited by Messrs. Koren and Danielssen as confirmatory of *their* views, are really coincident with *his*, and therefore with *mine*.

I am, Gentlemen,

Your obedient Servant,

WILLIAM B. CARPENTER.

\* An abstract of M. Claparède’s memoir will appear in the next Number of this Journal.